

WHAT IS CLAIMED IS:

1. A device for driving a plasma display panel having a plurality of first electrodes and second electrodes arranged in pairs, and a panel capacitor formed between a first electrode and a second electrode, comprising:

5 a first switch and a second switch coupled in series between a first power source and a second power source for respectively supplying a first voltage and a second voltage, a common point of the first switch and the second switch being coupled to a first end of the panel capacitor;

10 a third switch and a fourth switch coupled in series between the first power source and the second power source, a common point of the third switch and the fourth switch being coupled to a second end of the panel capacitor;

an inductor coupled to the first end of the panel capacitor; and

a fifth switch and a sixth switch coupled in parallel between the inductor and the second end of the panel capacitor,

15 wherein a current is supplied to the inductor through a path formed among the first power source, the inductor, and the second power source, and voltages at both ends of the panel capacitor are concurrently changed by a resonance generated by the panel capacitor and the inductor while the current is applied to the inductor.

20 2. The device of claim 1, further comprising a first diode coupled between the fifth switch and the inductor, and a second diode coupled between the inductor and the sixth switch.

3. The device of claim 1, wherein a difference between the first voltage and the second voltage is a voltage needed for sustain-discharging the plasma display panel.

25 4. The device of claim 1, wherein the first switch, the second switch, the third switch and the fourth switch each have a body diode.

5. A device for driving a plasma display panel having a plurality of first electrodes and second electrodes arranged in pairs, and a panel capacitor formed between a first electrode and a second electrode, comprising:

an inductor coupled to a first end of the panel capacitor;

30 a first signal line and a second signal line for supplying a first voltage;

a third signal line and a fourth signal line for supplying a second voltage;

a first current path, formed from the first signal line to the fourth signal line through the inductor, for supplying a current in a first direction to the inductor while a first end and a second end of the panel capacitor are substantially maintained at the first voltage and the second voltage, respectively;

5 a second current path, formed from the first end of the panel capacitor to the second end of the panel capacitor through the inductor, for changing voltages at both ends of the panel capacitor by the current in a first direction and a resonance provided between the panel capacitor and the inductor; and

10 a third current path formed in order of the third signal line, the inductor, and the second signal line so as to reduce the current in a first direction when the first end and the second end of the panel capacitor become the second voltage and the first voltage, respectively.

15 6. The device of claim 5, wherein the first end and the second end of the panel capacitor are respectively coupled to the third signal line and the second signal line when the voltages at the first end and the second end of the panel capacitor become the second voltage and the first voltage, respectively.

7. The device of claim 5, further comprising:

20 a fourth current path formed from the second signal line to the third signal line through the inductor for supplying a current in a second direction to the inductor while the voltages at the first end and the second end of the panel capacitor are substantially maintained at the second voltage and the first voltage, respectively, the second direction being opposite the first direction;

25 a fifth current path formed from the second end of the panel capacitor to the first end of the panel capacitor through the inductor, for changing the voltages at the first end and the second end of the panel capacitor by the current in a second direction and a second resonance provided between the panel capacitor and the inductor; and

30 a sixth current path formed in order of the fourth signal line, the inductor, and the first signal line so as to reduce the current in the second direction when the voltages at the first end and the second end of the panel capacitor respectively become the first voltage and the second voltage.

8. The device of claim 7, wherein the first end and the second end of the panel capacitor are respectively coupled to the first and fourth signal lines when the first end and the second end of the panel capacitor become the first voltage and the second voltage, respectively.

5 9. The device of claim 5, wherein the voltage difference between the first voltage and the second voltage is a voltage necessary for sustain-discharging the plasma display panel.

10 10. A method for driving a plasma display panel having a plurality of first electrodes and second electrodes arranged in pairs, a panel capacitor formed between the first electrode and the second electrode, an inductor coupled to a first end of the panel capacitor, and a first power source and a second power source for respectively supplying a first voltage and a second voltage, comprising:

15 supplying a current in a first direction through a voltage difference between the first power source and the second power source to store a first energy when the voltages at a first end and a second end of the panel capacitor are substantially maintained at the first voltage and the second voltage, respectively;

20 changing the voltages at the first end and the second end of the panel capacitor to the second voltage and the first voltage respectively, by using a resonance generated in a path formed from the first end of the panel capacitor to the second end of the panel capacitor through the inductor, and using the first energy; and

maintaining the first end and the second end of the panel capacitor to substantially be the second voltage and the first voltage, respectively, and recovering the energy remaining in the inductor to the first power source.

25 11. The method of claim 10, wherein a voltage difference between the first voltage and the second voltage is a voltage necessary for sustain-discharging the plasma display panel.

12. The method of claim 10, further comprising:

30 applying a current in a second direction to the inductor using the voltage difference between the first power source and the second power source to store a second energy when the first end and the second end of the panel capacitor are substantially maintained

at the second voltage and the first voltage, respectively, the second direction being opposite the first direction;

changing the voltages at the first end and the second end of the panel capacitor to the first voltage and the second voltage, respectively, by using a second resonance
5 generated in the path formed from the second end of the panel capacitor to the first end of the panel capacitor through the inductor, and using the second energy; and

maintaining the voltages at the first end and the second end of the panel capacitor to substantially be the first voltage and the second voltage, respectively, and recovering the energy remaining in the inductor to the first power source.